UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/851,317	05/09/2001	Erik Bengtsson	P12576-US1 BMOT	2811

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EXAMINER
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ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 09/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

<table>
<tr>
<td rowspan="2">Office Action Summary</td>
<td>Application No.
09/851,317</td>
<td>Applicant(s)
BENGTSSON ET AL.</td>
</tr>
<tr>
<td>Examiner
Sudhanshu C. Pathak</td>
<td>Art Unit
2634</td>
</tr>
</table>

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>May 9th, 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-22</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-22</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>May 9th, 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1. Claims 1-to-22 are pending in the application.

Drawings

2. Figure 2 should be designated by a legend such as "Prior Art" because only that

which is known is illustrated.

Corrective Action is required.

Specification

3. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-3, 11-12 & 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Boesch et al. (PG-Pub No. US 2002/0131389 A1).

Regarding to Claims 1, 11, 20, Boesch discloses a transmitter for processing signals with multiple access protocols, comprising dual-mode modulation systems, wherein the carrier frequency can be UHF, VHF, RF, microwave to be implemented in a mobile radiotelephone transmitter (Page 1, Paragraphs 2-3). Boesch also discloses the dual mode modulation to include both narrow bandwidth and wide bandwidth signals and multiple access protocols (Abstract, lines 1-10 & Page 1, Paragraphs 5-6 & Page 4, Paragraph 48 & Fig. 3, elements 340, 350 & Page 4, Paragraph 42). Boesch also discloses a common low pass "anti-aliasing" (reconstruction) filter coupled to both the dual mode signals and output one or more

analog waveforms (Page 1, Paragraph 4 & Page 2, Paragraphs 13, 17-25 & Page 4,

Paragraphs 44, 45 & Fig. 3, elements 312a, b & Claims 2, 16).

Regarding to Claims 2, 12, Boesch discloses a first access protocol is one of

Advanced Mobile Telephone System (AMPS), Digital Advanced Mobile Telephone

System (DAMPS), Global System for Mobile communication (GSM), and Enhanced

Data for GSM Evolution (EDGE) and wherein the second access protocol is another

one of AMPS, DAMPS, GSM, and EDGE (Abstract, lines 1-10 & Page 1, Paragraphs

5-6, 9-11 & Page 2, Paragraphs 17-19 & Page 3, Paragraph 31 & Page 4,

Paragraphs 46, 48).

Regarding to Claim 3, Boesch discloses a plurality of first sigma-delta converters

to produce a first digital waveform from first interpolated data and a plurality of

second sigma-delta converters to produce a second digital waveform from second

interpolated data (Page 2, Paragraphs 23-24 & Page 4, Paragraphs 43, 45-48 &

Page 5, Paragraph 58 & Fig. 3, elements 314a, b).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 4, 6-10, 13, 15-18, 19 & 21-22 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Boesch et al. (PG-Pub No. US 2002/0131389 A1) in

view of Applicant Admitted Prior Art (AAPA).

Regarding to Claims 4, 6-8, 13 & 15-18, Boesch discloses a mobile

communication transmitter processing signals with multiple access protocols

comprising a common reconstruction filter for both the protocol signals as described

above. Boesch further discloses the waveform generator comprising an upsampling

device over-sampling the transmission data to output first/second over-sampled data

at the first/second interpolator (Page 2, Paragraphs 23-24 & Page 4, Paragraphs 43,

45-48 & Page 5, Paragraph 58 & Fig. 3, elements 314a, b). However, Boesch does

not disclose a switch to connect one of the first and second digital waveform

generators to one or more common reconstruction filters and the waveform

generator comprising an interpolator to increase the sampling rate of the input data.

The Applicant Admitted Prior Art (AAPA) discloses mobile transmitting system

supporting multiple access protocols such as DAMPS, AMPS, GSM, EDGE (Fig. 1 &

Specification, Page 1, Paragraphs 2-4). The AAPA further discloses the transmitter

comprising a switch, which chooses the output of one or more protocol specific

filters, depending on the protocol implemented at the time (Fig. 1, element 170 &

Specification, Page 2, lines 1-8). The AAPA further discloses that a waveform

generator to comprise an interpolator (Fig. 1 & Specification, Page 1, Paragraph 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of

the invention that the AAPA teaches implementing a switch so as to select a choice

of protocol for transmission, this switch can be implemented in the system as

described in Boesch so as to select the protocol for transmission and since the filter

is common between the multiple protocols this switch can be implemented after the

digital-to-analog converter (DAC) and interpolation unit and before the common

reconstruction filter, thus satisfying the limitation of the claim.

Regarding to Claims 9-10, 19 & 21-22, Boesch discloses a mobile

communication transmitter processing signals with multiple access protocols

comprising a common reconstruction filter for both the protocol signals as described

above. However, Boesch does not disclose the one or more common reconstruction

filters comprise low pass filters with a bandwidth of 200 kHz or more.

The AAPA discloses the reconstruction filters for multiple access protocols

wherein the EDGE protocol would need a 500 kHz low pass filter to reconstruct the

protocol signal, and as such more wide band protocols would require a higher

bandwidth filters (Specification, Page 3, Paragraph 8 & Fig. 1). Therefore, it would

have been obvious to one of ordinary skill in the art at the time of the invention that

the AAPA teaches implementing a low pass reconstruction filter of bandwidth greater

than 200 kHz and this bandwidth is protocol dependent, and this can be

implemented in the mobile transmitter as described in Boesch such that the filter

bandwidth implemented is the one of the greater of the two protocols implemented in

the transmitter. Furthermore, as described in the AAPA the bandwidth for the

reconstruction filter is protocol dependent, and is a matter of design choice

depending on the greater of the two protocols implemented in the transmitter.

8. Claims 5 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over

    Boesch et al. (PG-Pub No. US 2002/0131389 A1) in view of Kim (6,064,664).

Regarding to Claims 5 & 14, Boesch discloses a mobile communication transmitter processing signals with multiple access protocols comprising a common reconstruction filter for both the protocol signals as described above. However, Boesch does not disclose a memory device to store first and second look-up tables containing data in accordance with the first and second access protocols.
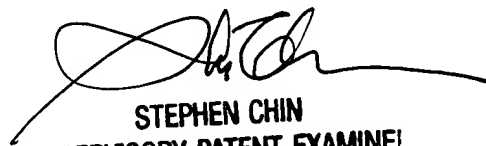
Kim discloses an interleaving apparatus for use in a multiple access mobile communication system (Column 1, lines 15-25). Kim further discloses contemporary interleavers utilize a memory look-up table to determine the proper interleavers address (Column 2, lines 40-55 & Column 5, lines 55-67 & Column 6, lines 6-15, 39-55). Kim discloses implementing the look-up table in a memory device in a mobile transmitter (Fig. 13-14 & Column 6, lines 6-15). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Kim teaches implementing a look-up table containing data in accordance with the access protocol, in a memory device in a mobile transmitter, and this can be implemented in the transmitter as described in Boesch in the waveform generator, for generating the protocol specific transmission data, so as to map the data to a sampling and interpolation rate. Kim discloses implementing this in a CDMA system, but this is a matter of design choice and this can be implemented in any multiple access protocols. Furthermore, it is also a matter of design to implement the look up table, for an interleaver, and a look up table can be implemented for mapping the transmission data to an interpolation mechanism.

Conclusion

1. <u>Any inquiry concerning this communication or earlier communications from the</u>

   <u>examiner should be directed to Sudhanshu C. Pathak whose telephone number</u>

   <u>is (703)-305-0341. The examiner can normally be reached on M-F: 9am-6pm.</u>

   - If attempts to reach the examiner by telephone are unsuccessful, the

     examiner's supervisor, Stephen Chin can be reached on (703)-305-4714.

   - The fax phone number for the organization where this application or

     proceeding is assigned is 703-872-9306.

   - Information regarding the status of an application may be obtained from

     the Patent Application Information Retrieval (PAIR) system. Status

     information for published applications may be obtained from either Private

     PAIR or Public PAIR. Status information for unpublished applications is

     available through Private PAIR only. For more information about the PAIR

     system, see http://pair-direct.uspto.gov. Should you have questions on

     access to the Private PAIR system, contact the Electronic Business

     Center (EBC) at 866-217-9197 (toll-free).

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